

**Baker**

01.01-9/30/92-02652  
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September 30, 1992

Commanding Officer  
Atlantic Division  
Naval Facilities Engineering Command  
Norfolk, Virginia 23511-6287

Attn: Mr. Byron Brant, P.E.  
Code 1822

Re: Contract N62470-89-D-4814  
Navy CLEAN, District III  
Contract Task Order (CTO) 0133  
Recommended Field Investigations at Site 69,  
MCB Camp Lejeune, North Carolina

Dear Mr. Brant:

This letter outlines a recommended sampling and analysis strategy to investigate the presence or absence of chemical agents (blister and/or nerve agents) at Site 69 (Rifle Range Chemical Dump), MCB Camp Lejeune. Per our discussion, the initial investigation at this site will have to be conducted in conjunction with the U.S. Army Chemical Material Destruction Agency (USACMDA) since the U.S. Army has jurisdiction at all sites where chemical agents are suspected.

The primary objective associated with the initial investigation at Site 69 is to determine the presence or absence of chemical agent degradation products in soil and groundwater near the trenches where chemical agents may be buried. Once this is determined, other investigations to complete the remedial investigation and feasibility study can be planned accordingly.

The following investigations are recommended to preliminarily assess the nature of soil and groundwater contamination at Site 69.

#### **Soil Investigation**

Based on the findings in the EPIC report, at least four trenches have been identified at Site 69 (see Figure 1). In order to collect data to perform a baseline human health risk assessment, surface soil samples (top six inches) should be collected at each trench. In addition, surface soil samples should be collected downslope from the trenches to assess whether off-site areas have been impacted via surface runoff. The recommended surface soil sampling locations are shown on Figure 1.

Subsurface soil samples should be collected near the trenches to help identify the contents of the trenches without excavation. Excavation of the trenches is not recommended by USACMDA at this time since the facility and surrounding area would have to be evacuated as a precautionary measure prior to trenching. In addition, a great health risk exists from an operational standpoint.

It is recommended that subsurface soil samples be collected from test borings drilled along each side of the trench. The locations of the former trenches can be determined with

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accuracy by reviewing aerial photographs from the EPIC Study and the results of Baker's recent Geophysical Investigation. The Geophysical Report should be available to LANTDIV in October, 1992. A surveyor can be procured to locate the "end points" of each trench identified in the EPIC Study. In addition, areas where buried metal are suspected, based on the results of the geophysical investigation, should also be located in the field by a surveyor. Proposed soil sample locations for the trench areas are shown on Figure 1. The locations of the trenches shown on Figure 1 are an approximation, based on the EPIC aerial photographs.

All soil samples should initially be field screened to determine whether chemical surety compounds (CSMs) are present. The samples should then be analyzed by a laboratory certified to handle chemical surety materials. Sufficient sample volume should be collected to also analyze for TCL organics and TAL inorganics in accordance with CLP protocols. It should be noted that the laboratories that are certified to analyze for chemical surety materials may not have the capabilities to perform the organic and inorganic analyses in accordance with CLP protocols. Therefore, it would be beneficial to chose a laboratory that could perform all desired analyses.

#### **Groundwater Investigation**

Groundwater samples should be collected from the six on-site monitoring wells and analyzed for TCL organics, TAL inorganics, and chemical surety degradation products. Three of the on-site wells (69GW2, 69GW3, and 69GW4) are located very close to the trenches. Previous investigations using these wells have exhibited moderate (i.e., above the MCL) levels of volatile organic constituents such as TCE. The samples collected from these wells were not analyzed for chemical surety degradation products; therefore, it is unknown whether groundwater has been impacted by the alleged disposal of chemical agents in these trenches.

Additional wells in the deep portion of the aquifer as well as off-site wells in the shallow and deep zones are recommended to define the extent of this contamination. Samples collected from the off-site monitoring wells would not be required to be analyzed for chemical surety degradation products if the on-site wells are not exhibiting chemical agent contamination. Proposed well locations are shown on Figure 1.

Baker would be happy to assist the Navy/Marine Corps in coordinating and planning any investigative work performed in conjunction with USACMDA. If you have any questions, please do not hesitate to contact me at (412) 269-2016.

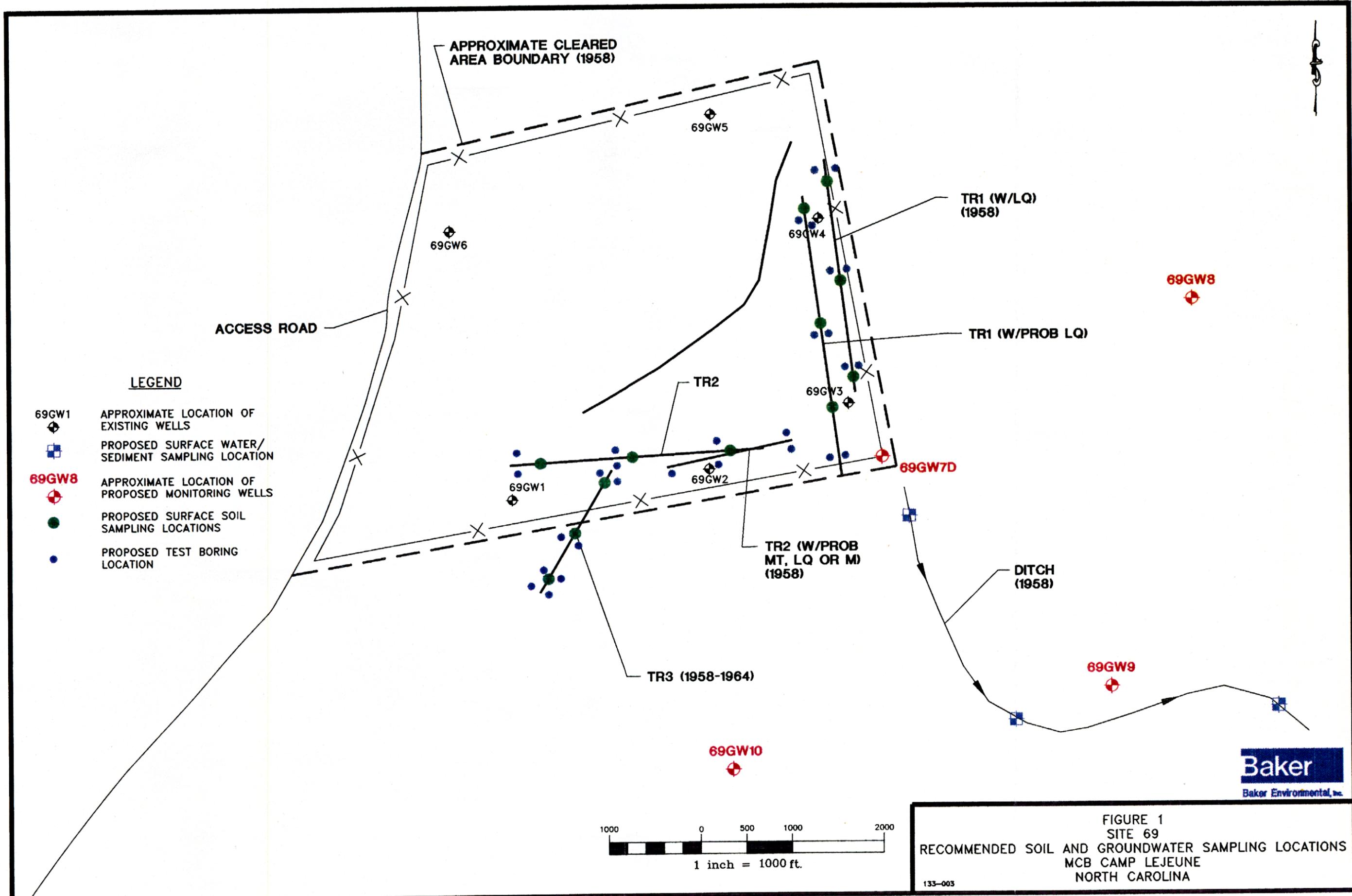
Sincerely,

BAKER ENVIRONMENTAL, INC.

*Raymond P. Wattias*  
Raymond P. Wattias  
Project Manager

RPW/nd  
Attachment

cc: Mr. Marc Lambert, P.E.  
Mr. Keith Simmons  
Mr. George Radford



**LEGEND**

- 69GW1 APPROXIMATE LOCATION OF EXISTING WELLS
- PROPOSED SURFACE WATER/ SEDIMENT SAMPLING LOCATION
- 69GW8 APPROXIMATE LOCATION OF PROPOSED MONITORING WELLS
- PROPOSED SURFACE SOIL SAMPLING LOCATIONS
- PROPOSED TEST BORING LOCATION

**FIGURE 1**  
**SITE 69**  
**RECOMMENDED SOIL AND GROUNDWATER SAMPLING LOCATIONS**  
**MCB CAMP LEJEUNE**  
**NORTH CAROLINA**

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